

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**Chemtura USA Corp- Geismar Plant THIAZOLES® Unit
Chemtura USA Corporation
Geismar, Ascension Parish, Louisiana
Agency Interest Number: 1433
Activity Number: PER20030016
Draft Permit 2099-V2**

The regulatory basis for the Statement of Basis is found in 40 Code of Federal Regulations (CFR) § 70.7 Permit issuance, renewals, reopenings, and revisions, subsection (a), paragraph (5) and the Louisiana Administrative Code (LAC), Title 33, Part III. AIR. Specifically §531. Public Notice and Affected State Notice, subsection A, paragraph 4. LAC 33:III.531.A.4 states:

“The permitting authority shall provide a statement that sets forth the legal and factual basis for the proposed permit conditions of any permit issued to a Part 70 source, including references to the applicable statutory or regulatory provisions. The permitting authority shall send this statement to any person who requests it and to EPA.”

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I. APPLICANT:

Company:

Chemtura USA Corporation
P.O. Box 397
Geismar, Louisiana 70734

Facility:

Chemtura USA Corp- Geismar Plant, THIAZOLES® Unit
36191 Highway 30, Geismar, Ascension Parish, Louisiana
Approximate UTM coordinates are 691.69 kilometers East and 3342.72 kilometers North, Zone 15

Responsible Official:

Mr. W. Keith Baggett, Factory Manager

II. FACILITY AND CURRENT PERMIT STATUS

Chemtura USA Corporation operates an integrated chemical production facility approximately 0.9 miles from Geismar, in Ascension Parish. Ascension Parish is currently designated as "marginal" non-attainment for the 8-hour ozone national ambient air quality standard, VOC and NO_x are the regulated air pollutants for ozone. The Geismar facility is a major source subject to the Part 70 operating permit program because it has the potential to emit 100 or more tons per year of VOC and NO_x. In addition, this facility has the potential to emit 10 or more tons per year of a single TAP and 25 or more tons per year of aggregate TAPs.

Chemtura's facility is bordered by BASF Corporation to the south, Rubicon to the west, Borden Chemicals and Plastics to the north and Louisiana Highway 30 to the east. Nearest residences to the site are communities located in Geismar, Louisiana and on LA. Highway 73. In 2001, the company's name was changed from Uniroyal Chemical Co., Inc. to Crompton Manufacturing Company, Inc. In 2006, the company's name was changed to Chemtura USA Corporation. This facility produces synthetic rubber and specialty rubber chemicals used as processing aids, anti-ozonants, and accelerators in the synthetic rubber and plastics processing industry in producing such items as automobile tires, rubber hoses, foam rubber gaskets, roofing shingles, etc.

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The process units that exist on this site include: FLEXZONE®, THIAZOLES®, CELOGEN® OT-MBT, CELOGEN® AZ, Maleic Hydrazide (MH/MBT), para-aminodiphenylamine (UBOB) and BHT/B-NINE. Other units produce EPDM synthetic rubber, ROYALENE®/TRILENE®. Support processes on site include a maintenance/lab area and several wastewater treatment plants.

Timely applications for initial Part 70 Title V permits were submitted by the company, therefore, the facility continues to operate pursuant to the "application shield" provided in the Part 70 Title V Program.

This Part 70 operating permit is for the THIAZOLES® Unit. The Initial Part 70 Operating Permit, Permit No. 2099-V0 was issued for the THIAZOLES® Unit on January 28, 1999. This permit was amended June 18, 2003. The THIAZOLES® Unit currently operates under a modification request to the Part 70 operating permit identified as Permit No. 2099-V1, dated November 12, 2003. This unit has been in operation since 1973.

Initial/Modification Title V Part 70 permits that were issued by the department include:

Permit #	Units or Sources	Date Issued
2099-V1	THIAZOLES® Unit	11/12/2003
2305-V1	Sulfur Recovery Unit	10/16/2003
2531-V0	Royalene WWTP	04/17/1998
2551-V0	Maintenance/Lab	06/30/1998
2327-V2	MH/MBT Unit	10/25/2003
514C-V1	CELOGEN® AZ Unit	08/28/2002
2292-V0	Wastewater Treatment Plant	09/22/1998
2292-V1	Wastewater Treatment Plant	12/30/2004 and amended 05/19/2005
2333-V0	Flexzone Unit	09/22/1998
2333-V1	Flexzone Unit	12/30/2004 and amended 04/20/2005
2242-V0	CELOGEN® OT-MBT Unit	08/18/1998
2572-V2	BHT/B-NINE Unit	01/14/2005
2531-V1	Royalene WWTP	02/25/2005 and amended 07/08/2005

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Permit #	Units or Sources	Date Issued
2242-V1	CELOGEN® OT-MBT Unit	08/26/05
2041-V0 (0180-00012-V0)	Royalene and Trilene Units	08/05/2005 and amended 12/22/2005
2572-V3	BHT/B-NINE Unit	11/10/2005

Initial/Renewal/Modification Title V Part 70 permits that are under review by the department include:

Permit #	Units or Sources	Date Issued
2099-V2	THIAZOLES® Unit	Permit Pending
1186C-V0	UBOB Unit	Title V Pending
2551-V1	Maintenance/Lab	Title V Pending
514C-V2	CELOGEN® AZ Unit	Title V Pending

III. PROPOSED PERMIT / PROJECT INFORMATION

Proposed Permit

A permit modification/renewal application and updated Emission Inventory Questionnaire (EIQ), were submitted by CHEMTURA on July 28, 2003, requesting modification/renewal of the Part 70 Operating Permit. On July 23 and 30, 2004, the company submitted supplemental information to the permit modification/renewal application and EIQ. Additional information, dated July 30, August 20, September 29, October 29, and December 2, 2004 was also received. On March 9 and 18, 2005 a revised application/updated EIQ was received, and supplemental information was received on September 19, 2005 and January 3, 2006.

A notice requesting public comment on the permit was published in The Advocate, Baton Rouge, Louisiana, on XXX XX, 2006; and The Gonzales Weekly, Louisiana, on XXX XX, 2006 and Published in the Office of Environmental Services Public Notice Mailing List on XXX XX, 2006. The proposed permit was also submitted to U.S. EPA Region VI for review and comment on 2006. All comments will be considered prior to the final permit decision.

Project description

In the THIAZOLES® Unit, mercaptobenzothiazole (MBT) is produced from a series of reactions of aniline, carbon disulfide, and other reactants in toluene. Vents from the

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reactors and MBT recovery steps are routed to the SRU and then to the incinerator, followed by the scrubber, which operate under the SRU - Incinerator Permit, identified as Permit Number 2305-V1. The product is crystallized, dried, and transferred to storage. MBT is temporarily stored and then sold or further processed to produce NaMBT.

The intermediate MBT reacts with sodium hypochlorite, t-butylamine, cyclohexylamine, and two other reactants to produce NaMBT. Unreacted chemicals are recovered and rerouted to the NaMBT reactor which is vented to the atmosphere through a scrubber. Particulate emissions from the product transfer and storage are controlled by dust collectors. Emissions from several reactant storage tanks are routed to the flare.

Permitted Air Emissions

This modification/renewal permit allows for the following:

- An increase in the emission rate of several emission points, associated with the change in the split of products identified as Delac NS and Delac S, Emission Points IEQ 04, IEQ 164, IEQ 316, IEQ 317, and IEQ 9027
- Removal of VOC speciation from several emission points as the pollutants are not required to be speciated (cyclohexylamine and tertiary butyl amine), Emission Points IEQ 04, IEQ 164, IEQ 316, IEQ 317, and IEQ 9027.
- Transferal of Emission Points IEQ 9002 and IEQ 85, cooling tower and sulfur pit, to the Sulfur Recovery Unit (SRU) Permit.
- Adding a dust collector, Emission Point IEQ 9033 to capture fugitive dust emissions from the finishing building.
- Routing of toluene emissions from the toluene storage tank, Emission Point IEQ 01 to the caustic scrubber, Emission Point IEQ 9032.
- Routing hydrogen sulfide emissions from several Emission Points, IEQ 03, IEQ 9020, and MBT Recovery to Emission Point IEQ 9032.
- Diverting emissions of hydrogen sulfide and carbon disulfide to the flare, Emission Point IEQ 103 from unplanned shutdowns of the SRU.
- Inclusion of an alternate operating scenario for the process flare, emission point IEQ 103ALT to use the THIAZOLES® Flare as backup for the FLEXZONE® Flare when it is not in service.
- Deletion of emission point IEQ 9003 as the oil expansion tank is included as an insignificant activity.
- Deletion of emission point IEQ 9007 as the filter is no longer in use and removed from service.
- Deletion of emission point IEQ 9024 as the storage tank was removed from service.

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Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM ₁₀	22.74	20.60	- 2.14
SO ₂	10.77	14.24	+ 3.47
NO _x	25.81	11.99	- 13.82
CO	5.31	9.49	+ 4.18
VOC*	47.83	44.49	- 3.34

*VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
Maleic Anhydride	<0.001	<0.001	0.0
1,1-Dimethylhydrazine	<0.001	<0.001	0.0
Cresol (p-cresol)	0.002	0.023	+0.021
Acetonitrile	0.06	0.021	- 0.039
Methyl isobutyl ketone	0.13	0.178	+0.048
Aniline	2.33	2.306	- 0.024
Methanol	0.36	0.572	+0.212
Toluene	21.00	21.152**	+0.152
Total	23.882	24.258	+0.376

*Highly Reactive VOC (HRVOC) Speciation (TPY):

Propylene	0.163
Isobutylene	0.399
Di-isobutylene	0.020
Tri-Isobutylene	0.005
Toluene	**21.152
Total	21.739

**Emissions of Toluene are included in TAPs and HRVOC

*Other VOC (TPY): 19.65

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Non-VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
Chlorine	1.12	1.115	- 0.005
Carbon Disulfide	1.05	1.052	+ 0.002
Hydrogen Sulfide	0.68	0.550	- 0.13
Sulfuric Acid	0.00	0.00	0.00
Zinc (PM ₁₀)	0.34	0.429	+ 0.089
Total	3.19	3.146	- 0.044

IV. REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Facility Specific Requirements Section of the draft permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms conditions and standards are provided in the Facility Specific Requirements Section of the draft permit.

National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing

The requirements of Subpart FFFF applies to any one who owns or operates a ~~miscellaneous organic chemical manufacturing process unit (MCPU), located at, or are~~ part of, a major source of hazardous air pollutants (HAP) emissions as defined in section 112(a) of the Clean Air Act (CAA). The THIAZOLES® Unit is an affected MCPU as defined in Subpart FFFF and must be in compliance with Subpart FFFF, as promulgated.

40 CFR 64-Compliance Assurance Monitoring Rule

Any pollutant-specific emissions unit subject to 40 CFR 64-Compliance Assurance Monitoring Rule are designated in the Facility Specific Requirements Section of the proposed permit.

Prevention of Significant Deterioration Applicability

There is no physical change or change in the method of operations, therefore the modifications/revisions proposed in this application do not trigger PSD review.

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Air Modeling Analysis

Emissions from the THIAZOLES® Unit are not expected to cause or to contribute to any Ambient Air Standards (AAS) or National Ambient Air Quality Standards (NAAQS) exceedances.

Comprehensive Toxic Air Pollutant Control Program-Chapter 51

Toxic air pollutant emissions from fugitives must be controlled to a degree that constitutes MACT. The THIAZOLES® Unit complies with the Louisiana MACT Determination for Non-HON Equipment Leak (Fugitive Emission Sources), dated March 30, 1995.

Maximum Achievable Control Technology (MACT) Requirements

The THIAZOLES® Unit is a major source of toxic air pollutants (TAPs) pursuant to LAC 33:III. Chapter 51. Aniline emissions are controlled by Maximum Achievable Control Technology (MACT). The other TAPs that emit from the THIAZOLES® Unit are either Class III pollutants, in the Supplemental List Table 51.3, or Class II pollutants with facility quantities that are less than the Minimum Emission Rate (MER) specified in the Louisiana Air Toxic Regulations.. Impact of these pollutants on air quality is below the Louisiana Toxic Air Pollutant Ambient Air Standards.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to Section VIII of the draft Part 70 permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the draft Part 70 permit.

V. PERMIT SHIELDS

A permit shield was not requested.

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VI. PERIODIC MONITORING

The Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Facility Specific Requirements Section of the proposed permit.

VII. APPLICABILITY AND EXEMPTIONS OF SELECTED SUBJECT ITEMS

See Permit.

VIII. STREAMLINED REQUIREMENTS

The THIAZOLES® Unit complies with the consolidated fugitive emissions program by complying with the Louisiana MACT Determination for Non-HON Equipment Leak (Fugitive Emission Sources), dated March 30, 1995, as designated in the Facility Specific Requirements Section of the proposed permit

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IX. GLOSSARY

Best Available Control Technologies (BACT) - An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under this part which would be emitted from any proposed major stationary source or major modification which the administrative authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

Carbon Monoxide (CO) - A colorless, odorless gas which is an oxide of carbon.

Grandfathered Status- Those facilities that were under actual construction or operation as of June 19, 1969, the signature date of the original Clean Air Act. These facilities are not required to obtain a permit. Facilities that are subject to Part 70 (Title V) requirements lose grandfathered status and must apply for a permit.

Hydrogen Sulfide (H₂S) - A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the action of acids on metallic sulfides, and is an important chemical reagent.

Maximum Achievable Control Technology (MACT) - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

New Source Review (NSR) - A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

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Nitrogen Oxides (NO_x) - Compounds whose molecules consists of nitrogen and oxygen.

Nonattainment New Source Review (NNSR) - A New Source Review permitting program for major sources in geographic areas that do not meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. Nonattainment NSR is designed to ensure that emissions associated with new or modified sources will be regulated with the goal of improving ambient air quality.

Organic Compound - Any compound of carbon and another element. Examples: Methane (CH₄), Ethane (C₂H₆), Carbon Disulfide (CS₂)

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM₁₀- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO₂) – An oxide of sulphur.

Title V permit – See Part 70 Operating Permit.

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Volatile Organic Compound (VOC) - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.